

Work Order ID 161127

Monday, May 08, 2017 9:20:22 AM

161127

Page 1

Item ID: D206-642-311BL

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube LH (Acl Blue)

Start Date: 5/30/2017 Start Qty: 1.00

1

Cust Item ID:

Required Date: 6/9/2017 Req'd Qty: 1.00

1

Customer:

Reference: SCHEDULED/C

Approvals: Process Plan: **DAS 21** Date: **MAY 08 2017**

Tooling: Date:

Run Start ***NR1***QC: **9-89** Date: SPC (Y/N): Date:Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
IIN-D206-642	Q	DAS 6 9-89	MAY 15 2017						
100	Document Control	0.00							
100	DOCUMENT CONTROL		DAS 27 9-89						
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile and create labels per PPP D206-642-311 CHG008		JUN 27 2017						
110	Pick Kit	0.00							
110			DAS 6 9-89						
Packaging	Memo	0.00	MAY 29 2017						
Packaging			DAS 28 9-89						
120	QC4- 100% Inspect kits for completeness	0.00							
120			DAS 27 9-89						
QC	Memo	0.03	JUN 29 2017						
Quality Control									

161150

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

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Page 2

Item ID: D206-642-311BL

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N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017 Start Qty: 1.00

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Cust Item ID:

Required Date: 6/9/2017 Req'd Qty: 1.00

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Customer:

Reference: SCHEDULED/C

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Packaging	0.00							
130									
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D206-642-311								
	Location: _____								
	PPP Rev: _____								
		Sold							
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.10							
Quality Control									

DAS
27
~~9-89~~

JUN 29 2017

17/6/29 JH



JUN 29 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="border: none;">Skid-tube ☐</td> <td style="border: none;">Cross tube ☐</td> <td style="border: none;">Water Jet ☐</td> <td style="border: none;">Engineering ☐</td> </tr> <tr> <td style="border: none;">Machining ☐</td> <td style="border: none;">Small Fab ☐</td> <td style="border: none;">Prod. Eng. Coord. ☐</td> <td style="border: none;">Quality ☐</td> </tr> <tr> <td style="border: none;">Thermoforming ☐</td> <td style="border: none;">Finishing ☐</td> <td style="border: none;">Rec/Store/Packaging ☐</td> <td style="border: none;">Other ☐</td> </tr> <tr> <td style="border: none;">Large Fab ☐</td> <td style="border: none;">Composite ☐</td> <td style="border: none;">Supplier ☐</td> <td></td> </tr> </table>						Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐																						
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Root Cause		FAULT CATEGORY																							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : ☐																			

Picklist Print

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Page 1

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311BI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:J05.10.11Added D3429-1 per CHG004KJ/CP/JLM/EC
 IPP Rev:K 07-12-04 ECN 1080p DD verified by:ec
 IPP Rev:L 08-09-29 as per DSI9421 DD verified by:EC IPP Rev:M
 as per REV.N DD 10.04.19 verified by:EC IPP Rev:N 14.04.25
 ECN14-520 DD verf:JLM IPP REV:O 15.10.09 ADDED
 BL DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
AN3-41A *AN3-41A* Bolt		Purchased	No			110	Each	90.0000	8	8	DAS 6 9-89	MAY 29 2017	DAS 28 9-89

Location	Loc Qty	Loc Code
FG	20	
122416	20	
ST347	70	
123355	28	
m137321	42	

AN4-6A *AN4-6A* BOLT		Purchased	No			110	Each	562.0000	12	12	DAS 6 9-89	MAY 29 2017	DAS 28
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Location	Loc Qty	Loc Code
over003	400	
M137320	400	
ST345	162	
M137178	162	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

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Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311RI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

AN4C5A Purchased No
AN4C5A
Bolt

110 Each 67.0000 1 1

**

DAS 6 28
9-89 MAY 29 2017

Location	Loc Qty	Loc Code
FP001	38	
m133990	38	
ST345	29	
m137164	29	

AN5-10A Purchased No
AN5-10A
Bolt

110 Each 97.0000 4 4

**

DAS 6 28
9-89 MAY 20 2017

Location	Loc Qty	Loc Code
GA	29	
122800	29	
ST338	68	
m137321	68	

AN5-11A Purchased No
AN5-11A
BOLT

110 Each 69.0000 8 8

**

DAS 6 28
9-89 MAY 20 2017

Location	Loc Qty	Loc Code
ST338	69	
M136648	8	
M137361	61	

AN5-12A Purchased No
AN5-12A
Bolt

110 Each 38.0000 4 4

**

DAS 6 28
9-89 MAY 29 2017

Location	Loc Qty	Loc Code
ST338	38	
M137166	8	
M137321	30	

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Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
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Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
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Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
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Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311RI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

D206-642-341BL Manufactured No

110 Each 0.0000 1 1

***D206-642-341RI ***

Replacement Skidtube (Fits LH or RH)

**

B16/150

DAS
28
9-89

D206-648-013BL Manufactured No

110 Each 0.0000 1 1

***D206-648-013RI ***

Ground Handling Wheel Modification

**

B16/1512

DAS
28
9-89

D2652 Manufactured No

110 Each 44.0000 16 16

***D2652 ***

Bushing

**

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

44

31985

44

D2712 Manufactured No

110 Each 272.0000 10 10

***D2712 ***

Set Screw

**

DAS
6
9-89

DAS
28
9-89

Location

Loc Qty

Loc Code

FG

50

29962

50

ST010

22

159501

12

89929

10

ST012a

200

153570

200

D2932-1BL Manufactured No

110 Each 2.0000 1 1

***D2932-1RI ***

Saddle LH Out, 206

**

DAS
6
9-89
MAY 30 2017
DAS
28
9-89

Location

Loc Qty

Loc Code

ST392

2

141549

2

DAS
27
9-89

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Environment ☐	No Re-verification ☐																																																																			
Design ☐	Operator ☐																																																																			
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Equip/Tooling ☐	Supplier ☐																																																																			
Handling/Pre ☐	Training ☐																																																																			
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OTHER : _____																																																																				

Picklist Print

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Page 4

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311RI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

D2933-1BL

Manufactured No

110

Each

0.0000

1 1

***D2933-1RI ***

Saddle LH In, 206

D2934

Manufactured No

110

Each

24.0000

2 2

D2934

Saddle Spacer

Location

Loc Qty

Loc Code

FG

6

31929

6

ST014

18

159374

18

D2935

Manufactured No

110

Each

26.0000

2 2

D2935

Saddle Spacer

Location

Loc Qty

Loc Code

FG

6

31793

6

ST014

20

159760

20

D2938-1BL

Manufactured No

110

Each

0.0000

1 1

***D2938-1RI ***

Saddle LH Out, 206

D2939-1BL

Manufactured No

110

Each

2.0000

1 1

***D2939-1RI ***

Saddle LH In, 206

Location

Loc Qty

Loc Code

ST391

2

159170

2

DAS
27
9-89

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**

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**

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JUN 06 2017
DAS
28
9-89

JUN 06 2017
DAS
28
9-89

JUN 06 2017
DAS
28
9-89

JUN 06 2017
DAS
28
9-89

JUN 06 2017
DAS
28
9-89

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Shop Packet Print

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DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date: _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : _____									

Picklist Print

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Page 5

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311BL ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

D3407-043 Manufactured No

110 Each 23.0000 1 1

D3407-043

Tow Ring

DAS

6

9-89 MAY 29 2017

DAS

28

9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

st530

23

153708

7

155622

6

159457

10

159721

D3413-1 Manufactured No

110 Each 46.0000 1 1

D3413-1

O-Ring

JUN 14 2017

DAS

6

9-89

DAS

28

9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

2

145648

2

st530

44

145648

1

151731

4

153479

12

155256

12

159722

15

161595

D3456-1 Manufactured No

110 Each 85.0000 1 1

D3456-1

Washer

MAY 29 2017

DAS

6

9-89

DAS

28

9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

7

25701

7

ST036

50

159500

50

ST36

28

157166

28

/

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date: _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

Picklist Print

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Page 6

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311BL ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

D3457-1 Manufactured No

110 Each 46.0000 2 2

D3457-1

Washer

**

MAY 29 2017

DAS 28
6
9-89

DAS 27
9-89

Location	Loc Qty	Loc Code
FG	10	
32409	10	
ST036	12	
154960	12	
ST038A	24	
159723	24	

MS21042L3 Purchased No

110 Each 1,492.000 8 8

MS21042L3

Nut

**

MAY 29 2017

DAS 28
6
9-89

DAS 27
9-89

Location	Loc Qty	Loc Code
FP001	91	
m135945	91	
GA	464	
m134360	102	
M136665	362	
ST303	937	
m137073	11	
m137166	3	
m137321	923	

137485

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐			
Design ☐	☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐			
Doc/Data ☐	☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐			
Equip/Tooling ☐	☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐			
Handling/Pre ☐	☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐			
Material ☐	☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐			
Internal Transport ☐	☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐			
Tribal Knowledge ☐	☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐			
LOA ☐	☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐			
Substation ☐	☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐			
Past Expiry Date ☐	☐	Manufacturing Process ☐	OTHER : ☐						
Misidentified ☐	☐	Past Due ☐							

Picklist Print

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Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311RI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

110

Each

2,979.000

12

12

MS21042I 4

Nut

**

MAY 29 2017

DAS 6 28
9-89 9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FP001

10

m133363

10

GA

148

m135058

148

OVER007

1400

m137371

1000

m137402

400

ST303

1421

m136986

3

m137166

12

m137321

1406

MS21043-4

Purchased

No

110

Each

930.0000

1

1

MS21043-4

Nut

**

MAY 29 2017

DAS 6 28
9-89 9-89

DAS
27
9-89

Location

Loc Qty

Loc Code

FG

40

104603

40

GA

7

m132803

7

ST302

883

m136406

2

m136983

281

m137361

300

m137371

300

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																											
Date: _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval																																																								
Description Work Order Deviation				Disposition				Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____																																																							
Root Cause		FAULT CATEGORY																																																													
Environment ☐	Design ☐	Doc/Data ☐	Equip/Tooling ☐	Handling/Pre ☐	Material ☐	Internal Transport ☐	Tribal Knowledge ☐	LOA ☐	Substation ☐	Past Expiry Date ☐	Misidentified ☐	No Re-verification ☐	Operator ☐	Offset/Setup ☐	Supplier ☐	Training ☐	Use for Testing ☐	Poor Information ☐	Rushing ☐	Product Improvement ☐	Process Improvement ☐	Manufacturing Process ☐	Past Due ☐	Pressure/Forced ☐	Bending ☐	Centre Not Concentric ☐	Cracks ☐	Crimp/Kink/Ripple/Wave ☐	Cuffs ☐	Crushing ☐	Heat Treat ☐	Wave/Twist in Tube ☐	Marks/Chatter ☐	Temperature/Cure ☐	Set-up ☐	BOM/Route ☐	Broken/Damage/Defect ☐	Inspection Incomplete/Unqualified ☐	Contamination ☐	Countersink ☐	Cut Too Short ☐	Instructions Incomplete/Unclear ☐	Drill Holes ☐	Power Loss/Surge ☐	Folio/Program ☐	Grain ☐	Weld ☐	Wrong Stock Pulled ☐	Out of Sequence ☐	Off-set ☐	Mislabeled ☐	Fit/Function ☐	Misaligned/off center ☐	Positioned Wrong ☐	Outside Dimensions ☐	Over/Under tolerance ☐	Part Incorrect ☐	Part Lost/Missing ☐	Part Moved ☐	Drawing ☐	Finish ☐	Misread ☐	Turning Sequence ☐
																						OTHER : ☐																																									

Picklist Print

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Page 8

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311RI ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0463R

Purchased

No

110

Each

231.0000

1

1

NAS1149C0463R

Washer

**

MAY 29 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

FP001

25

m127306

25

ST266

206

m134167

6

m136263

200

DAS 27
9-89

NAS1149D0363J

Purchased

No

110

Each

629.0000

8

8

NAS1149D0363J

Washer

**

MAY 29 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

GA

42

m134055

42

ST263

587

m137061

100

m137164

487

DAS 27
9-89

NAS1149D0463J

Purchased

No

110

Each

4,282.000

25

25

NAS1149D0463J

Washer

**

MAY 29 2017

DAS 28
6
9-89

Location

Loc Qty

Loc Code

GA

48

M135056

48

ST260a

4000

M137371

2000

M137381

2000

ST263

234

M137166

234

DAS 27
9-89

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DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date: _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

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Monday, May 08, 2017 9:20:22 AM

Work Order ID: 161127

161127

Parent Item: D206-642-311BL

***D206-642-311BL ***

Parent Item Name: Skidtube LH (Ael Blue)

Start Date: 5/30/2017

Required Date: 6/9/2017

Start Qty: 1.00

Required Qty: 1.00

NAS1149D05631

Purchased

No

110

Each

795.0000

8

8

NAS1149D0563.1

Washer

MAY 29 2017 **DAS 28**
6 9-89
9-89

Location

Loc Qty

Loc Code

GA

110

m135774

110

ST263

685

m136295

7

m136986

20

m137361

658

DAS
27
9-89

Monday, May 08, 2017 9:20:22 AM

Shop Packet Print

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DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date: _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐		FAULT CATEGORY Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐		Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐									

Page 1

Quality Control

Supplemental Type Certificate

Number SA00475SE

This certificate, issued to

Dart Aerospace USA, Inc.
190 S. Danebo Ave.
Eugene, OR 97402

certifies that the change in the type design for the following product with the limitations and conditions therefore as specified hereon meets the airworthiness requirements of Part 27 of the Federal Aviation Regulations.

Original Product—Type Certificate Number: H2SW
Make: Bell
Model: 206, 206A, 206A-1, 206B, 206B-1, 206L, 206L-1, 206L-3, 206L-4, and 407

Description of the Type Design Change: Replacement of the original landing gear skid tubes and saddles with DART Aerospace Model D206-642 skid tubes and saddles fabricated in accordance with DART Aerospace Master Drawing List No. MDL-D206-642, Revision Q, dated March 8, 2007, or later Federal Aviation Administration (FAA) approved revision, and installed in accordance with DART Aerospace Installation Instructions No. D206-642, Revision K, dated September 25, 2006, or later FAA-approved revision. These skid tubes and saddles must be maintained in accordance with DART Aerospace Instructions for Continued Airworthiness ICA-D206-642, Revision O, dated March 7, 2007, or later FAA-accepted revision.

Limitations and Conditions: Approval of this change in type design applies to the above model rotorcraft only. This approval should not be extended to other rotorcraft of these models on which other previously approved modifications are incorporated unless it is determined by the installer that the relationship between this change and any previously approved modifications, including changes in type design, will introduce no adverse effect upon the airworthiness of that rotorcraft. A copy of this certificate must be maintained as part of the permanent records for the modified rotorcraft.

If the holder agrees to permit another person to use this certificate to alter the product, the holder shall give the other person written evidence of that permission.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: April 22, 1997

Date reissued: October 28, 2015

Date of issuance: October 23, 1997

Date amended: April 20, 2007



By direction of the Administrator

Sancler Brown
(Signature)

for Manager, Seattle Aircraft Certification Office
(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

4.5 206 L/L-1/L-3/L-4/407 LOW & HIGH GEAR SKIDTUBES

ITEM	QTY -311	QTY -312	QTY -313	QTY -314	QTY -341	QTY -357	QTY -349	QTY -351	QTY -013	PART NUMBER	DESCRIPTION
	X									D206-642-311	SKIDTUBE INSTALLATION, LH
		X								D206-642-312	SKIDTUBE INSTALLATION, RH
			X							D206-642-313	SKIDTUBE INSTALLATION, LH
				X						D206-642-314	SKIDTUBE INSTALLATION, RH
	1	1			X					D206-642-341	SKIDTUBE
						X				D206-642-357	WEARSHOE KIT (REPLACES -347)
							X			D206-642-349	RUN-ON LANDING WEARPLATE KIT
			1	1				X		D206-642-351	SKIDTUBE
	1	1	1	1					X	D206-648-013	GROUND HANDLING KIT
1					1					D2650-5	SKIDTUBE ASSEMBLY
1								1		D4361-041	SKIDTUBE ASSEMBLY
2A					14			4		D2651-1	* PLUG ⁽¹⁾
2B					14			4		D2651-3	* O-RING ⁽¹⁾
3					1			1		D2646	* AFT CAP ⁽¹⁾
4					2			2		MS27039-1-08	* SCREW ⁽¹⁾
5					2			2		NAS1149D0332J	* WASHER ⁽¹⁾ (OR AN960JD10L)
6	1		1							D2932-1	SADDLE, FWD OUT, LH
6		1		1						D2932-2	SADDLE, FWD OUT, RH
7	1		1							D2933-1	SADDLE, FWD IN, LH
7		1		1						D2933-2	SADDLE, FWD IN, RH
8	1		1							D2938-1	SADDLE, AFT OUT, LH
8		1		1						D2938-2	SADDLE, AFT OUT, RH
9	1		1							D2939-1	SADDLE, AFT IN, LH
9		1		1						D2939-2	SADDLE, AFT IN, RH
10	8	8	8	8						AN3-41A	BOLT
11	16	16	16	16						D2652	BUSHING
12A	8	8	8	8						MS21042-3	NUT (OR MS21042L3)
12B	8	8	8	8						NAS1149D0363J	WASHER (OR AN960JD10)
13	4	4	4	4						AN5-10A (OR AN5-11A)	* BOLT ⁽²⁾
14	4	4	4	4						AN5-11A (OR AN5-12A)	* BOLT ⁽²⁾
15	8	8	8	8						NAS1149D0563J	WASHER (OR AN960JD516)
16	12	12	12	12						AN4-6A	BOLT
17	24	24	24	24						NAS1149D0463J	WASHER (OR AN960JD416)
18	12	12	12	12						MS21042-4	NUT (OR MS21042L4)
20A					6	6				D3537-1	WEARPAD (REPLACES D2648-3)
21A					1	1				D3537-3	WEARPAD (REPLACES D3429-1)
22A					1	1				D4956-11	WEARSHOE (REPLACES D3535-11 + D3536-11)
23A					1	1				D4956-23	WEARSHOE (REPLACES D3535-23 + D3536-23)
24A					1	1				D4956-35	WEARSHOE (REPLACES D3535-35 + D3536-35)
26A					54	54				MS27039C1-08	SCREW
26B					54	54				NAS1149C0332R	WASHER (OR AN960C10L)
26C					54					ALS7-1032-130	* INSERT ⁽¹⁾ (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
30	1	1	1	1						D3407-043	TOW RING ASSEMBLY (REPLACES D2968-043)
32A	1	1	1	1						D3456-1	WASHER
32B	2	2	2	2						D3457-1	WASHER
33	1	1	1	1						MS21043-4	NUT
34	1	1	1	1						AN4C5A	BOLT
35	1	1	1	1						NAS1149C0463R	WASHER (OR AN960C416)
36	1	1	1	1						D3413-1	RING (REPLACES D2655)
37	10	10	10	10						D2712	SET SCREW
38	2	2	2	2						D2934	SADDLE SPACER
39	2	2	2	2						D2935	SADDLE SPACER
40									2	D3414-041	GHW LUG (REPLACES D2659)
41									4	AN3C37A	BOLT
42									8	D2652	BUSHING
43									4	MS21043-3	NUT
44									4	NAS1149C0363R	WASHER (OR AN960C10)

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Revision: Q

Date: 13.08.12